

CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Medical Cannabis Use in the Elderly: Clinical Effectiveness and Guidelines

Service Line: Rapid Response Service
Version: 1.0
Publication Date: December 21, 2017
Report Length: 8 Pages

Authors: Wendy Pejic, Lorna Adcock

Cite As: Medical cannabis use in the elderly: clinical effectiveness and guidelines. Ottawa: CADTH; 2017 Dec. (CADTH rapid response report: reference list).

Acknowledgments:

Disclaimer: The information in this document is intended to help Canadian health care decision-makers, health care professionals, health systems leaders, and policy-makers make well-informed decisions and thereby improve the quality of health care services. While patients and others may access this document, the document is made available for informational purposes only and no representations or warranties are made with respect to its fitness for any particular purpose. The information in this document should not be used as a substitute for professional medical advice or as a substitute for the application of clinical judgment in respect of the care of a particular patient or other professional judgment in any decision-making process. The Canadian Agency for Drugs and Technologies in Health (CADTH) does not endorse any information, drugs, therapies, treatments, products, processes, or services.

While care has been taken to ensure that the information prepared by CADTH in this document is accurate, complete, and up-to-date as at the applicable date the material was first published by CADTH, CADTH does not make any guarantees to that effect. CADTH does not guarantee and is not responsible for the quality, currency, propriety, accuracy, or reasonableness of any statements, information, or conclusions contained in any third-party materials used in preparing this document. The views and opinions of third parties published in this document do not necessarily state or reflect those of CADTH.

CADTH is not responsible for any errors, omissions, injury, loss, or damage arising from or relating to the use (or misuse) of any information, statements, or conclusions contained in or implied by the contents of this document or any of the source materials.

This document may contain links to third-party websites. CADTH does not have control over the content of such sites. Use of third-party sites is governed by the third-party website owners' own terms and conditions set out for such sites. CADTH does not make any guarantee with respect to any information contained on such third-party sites and CADTH is not responsible for any injury, loss, or damage suffered as a result of using such third-party sites. CADTH has no responsibility for the collection, use, and disclosure of personal information by third-party sites.

Subject to the aforementioned limitations, the views expressed herein are those of CADTH and do not necessarily represent the views of Canada's federal, provincial, or territorial governments or any third party supplier of information.

This document is prepared and intended for use in the context of the Canadian health care system. The use of this document outside of Canada is done so at the user's own risk.

This disclaimer and any questions or matters of any nature arising from or relating to the content or use (or misuse) of this document will be governed by and interpreted in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein, and all proceedings shall be subject to the exclusive jurisdiction of the courts of the Province of Ontario, Canada.

The copyright and other intellectual property rights in this document are owned by CADTH and its licensors. These rights are protected by the Canadian *Copyright Act* and other national and international laws and agreements. Users are permitted to make copies of this document for non-commercial purposes only, provided it is not modified when reproduced and appropriate credit is given to CADTH and its licensors.

About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.

Funding: CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

Research Questions

1. What is the clinical effectiveness on the use of medical cannabis in the elderly?
2. What are the evidence-based guidelines on the use of medical cannabis in the elderly?

Key Findings

One systematic review, four randomized controlled trials, and two non-randomized studies were identified regarding the clinical effectiveness on the use of medical cannabis in the elderly.

Methods

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases and a focused Internet search. No methodological filters were applied to limit retrieval by publication type. The search was limited to English language documents published between January 1, 2012 and December 12, 2017. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Patients who are elderly, seniors
Intervention	Medical cannabis (anyform, route, dose)
Comparators	Q1: Any treatment; No treatment (safety only); Placebo Q2: No comparator
Outcomes	Q1: Clinical effectiveness (benefit/harm), safety Q2: Guidelines
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

One systematic review, four randomized controlled trials, and two non-randomized studies were identified regarding the clinical effectiveness on the use of medical cannabis in the elderly. No relevant health technology assessments or evidence-based guidelines were identified.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

1. van den Elsen GA, Ahmed AI, Lammers M, Kramers C, Verkes RJ, van der Marck MA, et al. Efficacy and safety of medical cannabinoids in older subjects: a systematic review. *Ageing Res Rev.* 2014 Mar;14:56-64.
[PubMed: PM24509411](#)

Randomized Controlled Trials

2. Ahmed AI, van den Elsen GA, Colbers A, Kramers C, Burger DM, van der Marck MA, et al. Safety, pharmacodynamics, and pharmacokinetics of multiple oral doses of delta-9-tetrahydrocannabinol in older persons with dementia. *Psychopharmacology (Berl)* [Internet]. 2015 Jul [cited 2017 Dec 20];232(14):2587-95. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4480847>
[PubMed: PM25752889](#)
3. van den Elsen GA, Ahmed AI, Verkes RJ, Kramers C, Feuth T, Rosenberg PB, et al. Tetrahydrocannabinol for neuropsychiatric symptoms in dementia: A randomized controlled trial. *Neurology* [Internet]. 2015 Jun 9 [cited 2017 Dec 20];84(23):2338-46. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4464746>
[PubMed: PM25972490](#)
4. van den Elsen GAH, Ahmed AIA, Verkes RJ, Feuth T, van der Marck MA, Olde Rikkert MGM. Tetrahydrocannabinol in Behavioral Disturbances in Dementia: A Crossover Randomized Controlled Trial. *Am J Geriatr Psychiatry.* 2015 Dec;23(12):1214-24.
[PubMed: PM26560511](#)
5. Ahmed AI, van den Elsen GA, Colbers A, van der Marck MA, Burger DM, Feuth TB, et al. Safety and pharmacokinetics of oral delta-9-tetrahydrocannabinol in healthy older subjects: a randomized controlled trial. *Eur Neuropsychopharmacol.* 2014 Sep;24(9):1475-82.
[PubMed: PM25035121](#)

Non-Randomized Studies

6. Shelef A, Barak Y, Berger U, Paleacu D, Tadger S, Plopsky I, et al. Safety and Efficacy of Medical Cannabis Oil for Behavioral and Psychological Symptoms of Dementia: An - Open Label, Add-On, Pilot Study. *J Alzheimers Dis.* 2016;51(1):15-9.
[PubMed: PM26757043](#)
7. Woodward MR, Harper DG, Stolyar A, Forester BP, Ellison JM. Dronabinol for the treatment of agitation and aggressive behavior in acutely hospitalized severely demented patients with noncognitive behavioral symptoms. *Am J Geriatr Psychiatry.* 2014 Apr;22(4):415-9.
[PubMed: PM23597932](#)

Guidelines and Recommendations

No literature identified.

Appendix — Further Information

Previous CADTH Reports

8. Cannabinoids for behavioural symptoms in adults with dementia: a review of clinical effectiveness and guidelines (project in progress) [Internet]. Ottawa: CADTH; 2017. [cited 2017 Dec 20]. Project number: RC0952. Available from: <https://www.cadth.ca/cannabinoids-behavioural-symptoms-adults-dementia-review-clinical-effectiveness-and-guidelines>
9. Medical cannabis or cannabinoids for the treatment of insomnia disorder in adults: clinical effectiveness and guidelines [Internet]. Ottawa: CADTH; 2017. [cited 2017 Dec 20]. (CADTH rapid response report: summary of abstracts). Available from: <https://www.cadth.ca/sites/default/files/pdf/htis/2017/RB1113%20Medical%20Cannabis%20for%20Insomnia%20Revised%20Final.pdf>
10. Cannabinoid buccal spray for chronic non-cancer or neuropathic pain: a review of clinical effectiveness, safety, and guidelines [Internet]. Ottawa: CADTH; 2016 [cited 2017 Dec 20]. (CADTH Rapid Response Report: summary with critical appraisal). Available from: https://www.cadth.ca/sites/default/files/pdf/htis/2016/RC0768%20Cannabinoid%20Buccal%20Spray%20for%20Pain%20Management_Updated%20Final.pdf
11. Long-term nabilone use: a review of the clinical effectiveness and safety [Internet]. Ottawa: CADTH; 2015 [cited 2017 Dec 20]. (CADTH rapid response report: summary with critical appraisal). Available from: <https://www.cadth.ca/sites/default/files/pdf/htis/oct-2015/RC0715%20Long-term%20Nabilone%20Use%20Final.pdf>
12. Medical marijuana for the treatment of mental illness: clinical evidence [Internet]. Ottawa: CADTH; 2014 [cited 2017 Dec 20]. (CADTH rapid response report: reference list). Available from: <https://www.cadth.ca/sites/default/files/pdf/htis/nov-2014/RA0690%20Marijuana%20for%20Mental%20Illness%20Final.pdf>
13. The use of medical marijuana: guidelines and recommendations [Internet]. Ottawa: CADTH; 2013 [cited 2017 Dec 20]. (CADTH rapid response report: reference list). Available from: <https://www.cadth.ca/sites/default/files/pdf/htis/jan-2013/RA0611%20Medical%20Marijuana%20Final.pdf>

Randomized Controlled Trials - Mixed-Age Population

14. Ball S, Vickery J, Hobart J, Wright D, Green C, Shearer J, et al. The Cannabinoid Use in Progressive Inflammatory brain Disease (CUPID) trial: a randomised double-blind placebo-controlled parallel-group multicentre trial and economic evaluation of cannabinoids to slow progression in multiple sclerosis. Health Technol Assess [Internet]. 2015 Feb [cited 2017 Dec 20];19(12). Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4781163>
[PubMed: PM25676540](#)
15. Reichenbach ZW, Sloan J, Rizvi-Toner A, Bayman L, Valestin J, Schey R. A 4-week pilot study with the cannabinoid receptor agonist dronabinol and its effect on metabolic parameters in a randomized trial. Clin Ther. 2015 Oct 1;37(10):2267-74.
[PubMed: PM26283236](#)

16. Zajicek J, Ball S, Wright D, Vickery J, Nunn A, Miller D, et al. Effect of dronabinol on progression in progressive multiple sclerosis (CUPID): a randomised, placebo-controlled trial. *Lancet Neurol* [Internet]. 2013 Sep [cited 2017 Dec 20];12(9):857-65. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3744749>
[PubMed: PM23856559](#)

Non-Randomized Studies

Alternative Outcome

17. Choi NG, DiNitto DM, Marti CN, Choi BY. Association between Nonmedical Marijuana and Pain Reliever Uses among Individuals Aged 50. *J Psychoactive Drugs*. 2017 Sep;49(4):267-78.
[PubMed: PM28699829](#)
18. Choi NG, DiNitto DM, Marti CN. Nonmedical versus medical marijuana use among three age groups of adults: Associations with mental and physical health status. *Am J Addict*. 2017 Oct;26(7):697-706.
[PubMed: PM28834024](#)
19. Lane SD, da Costa SC, Teixeira AL, Reynolds CF, III, Diniz BS. The impact of substance use disorders on clinical outcomes in older-adult psychiatric inpatients. *Int J Geriatr Psychiatry*. 2017 Oct 18.
[PubMed: PM29044798](#)

Mixed-Age Population

20. Allshouse AA, MaWhinney S, Jankowski CM, Kohrt WM, Campbell TB, Erlandson KM. The Impact of Marijuana Use on the Successful Aging of HIV-Infected Adults. *J Acquir Immune Defic Syndr* [Internet]. 2015 Jun 1 [cited 2017 Dec 20];69(2):187-92. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4446237>
[PubMed: PM25647530](#)

Elderly Not Specifically Mentioned

21. Sabia JJ, Swigert J, Young T. The Effect of Medical Marijuana Laws on Body Weight. *Health Econ*. 2017 Jan;26(1):6-34.
[PubMed: PM26602324](#)

Qualitative Studies

Alternative Outcome

22. Choi NG, DiNitto DM, Marti CN. Older marijuana users: Life stressors and perceived social support. *Drug Alcohol Depend*. 2016 Dec 1;169:56-63.
[PubMed: PM27776245](#)

Review Articles

23. Rill L. Clearing the smoke on misconceptions of medical marijuana: a focus on older adults [Internet]. Tallahassee (FL): Claude Pepper Center, Florida State University; 2017. [cited 2017 Dec 20]. Available from: http://claupeppercenter.fsu.edu/wp-content/uploads/2017/09/Clearing-the-Smoke-on-Misconceptions-of-Medical-Marijuana_NonAnonymous.pdf

24. Kaskie B, Ayyagari P, Milavetz G, Shane D, Arora K. The Increasing Use of Cannabis Among Older Americans: A Public Health Crisis or Viable Policy Alternative? *Gerontologist*. 2017 Nov 10;57(6):1166-72.
[PubMed: PM28077451](#)
25. Katz I, Katz D, Shoenfeld Y, Porat-Katz BS. Clinical Evidence for Utilizing Cannabinoids in the Elderly. *Isr Med Assoc J*. 2017 Feb;19(2):71-5.
[PubMed: PM28457053](#)
26. Mahvan TD, Hilaire ML, Mann A, Brown A, Linn B, Gardner T, et al. Marijuana Use in the Elderly: Implications and Considerations. *Consult Pharm*. 2017 Jun 1;32(6):341-51.
[PubMed: PM28595684](#)
27. Rahman H, Kim M, Leung G, Green JA, Katz S. Drug-Herb Interactions in the Elderly Patient with IBD: a Growing Concern. *Curr Treat Options Gastroenterol*. 2017 Dec;15(4):618-36.
[PubMed: PM28918484](#)
28. Suryadevara U, Bruijnzeel DM, Nuthi M, Jagnarine DA, Tandon R, Bruijnzeel AW. Pros and Cons of Medical Cannabis use by People with Chronic Brain Disorders. *Curr Neuropharmacol*. 2017;15(6):800-14.
[PubMed: PM27804883](#)
29. Ahmed A, van der Marck MA, van den Elsen G, Olde Rikkert M. Cannabinoids in late-onset Alzheimer's disease. *Clin Pharmacol Ther*. 2015 Jun;97(6):597-606.
[PubMed: PM25788394](#)